

asserts that the specification does not enable the feature of randomly shifting a frequency of a reference clock signal, or shifting a frequency of a reference clock signal in the form of either a sine wave or a triangular wave. The Applicant respectfully traverses the assertion and the rejection.

The Applicant respectfully submits that, at the time of the present invention, a circuit for producing a desired waveform was available. In addition, the feature of randomly shifting a frequency of a reference clock signal, or shifting a frequency of a reference clock signal in the form of either a sine wave or a triangular wave are described in the specification at least at page 7, paragraphs 4-6. The modulation of clock signals is described in the present specification, for example, at page 15. Therefore, the teaching of the concept of randomly shifting or shifting in the form of a triangular wave or sine wave, as described in the present specification, is sufficient to enable one of ordinary skill in the art to practice the present invention as claimed.

Also, it appears that the features objected to by the Examiner were well known to those of ordinary skill in the art and thus a detailed explanation of these features is not required to enable the subject invention. That is, the disclosure is sufficient to permit one of skill in the art to practice the invention without undue experimentation. The Applicant respectfully directs the Examiner's attention to the citation of the Hoekstra article, "Frequency Modulation of System Clocks for EMI Reduction," noted at the bottom of page 15 of the specification, which appears to disclose in detail the frequency modulation of a standard clock signal, including a triangular modulation. The Applicant respectfully submits that the detailed examples given in the specification, together with the disclosure of triangular or sine wave modulation, read in light of the knowledge generally available to one of skill in the art as exemplified by the Hoekstra article is sufficient to demonstrate that one of skill in the art could practice the claimed modulation techniques without undue experimentation.

Further, the Applicant notes that the Examiner asserts on page 4 of the Official Action that Bassetti discloses randomly shifting a clock signal to generate a modulated

clock and this may be further relied upon to demonstrate that one of skill in the art would be able to practice the present invention without undue experimentation.

Therefore, the Applicant respectfully submits that claims 5-7 and 17-19 are enabled. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. § 112 are in order and respectfully requested.

Paragraph 5 of the Official Action rejects claims 13 and 17 as anticipated by U.S. Patent No. 6,046,735 to Bassetti et al. The Applicant respectfully traverses the rejection because the Official Action has not established an anticipation rejection.

As stated in MPEP § 2131, to establish an anticipation rejection, each and every element as set forth in the claim must be described either expressly or inherently in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

The Applicant respectfully submits that an anticipation rejection cannot be maintained against independent claim 13 of the present application. Bassetti does not teach all the elements of the independent claims, either explicitly or inherently. In pertinent part, claim 13 recites that a modulated clock signal obtained by frequency modulating a reference clock signal is inputted to a source signal line-side driving circuit, while a modulated clock signal which differs from the modulated clock signal in quantity of frequency shifting or method of frequency modulation is inputted to a gate signal line-side driving circuit. That is, claim 13 recites applying a first modulated clock to a source driving circuit and a second, different modulated clock to a gate driving circuit. While it appears that Bassetti could possibly be interpreted to disclose the application of a modulated clock signal to one driving circuit, the Applicant respectfully submits that Bassetti lacks any disclosure or suggestion of applying a first modulated clock to a source driving circuit and a second, different modulated clock to a gate driving circuit, either explicitly or inherently. That is, Bassetti does not teach a modulated clock signal obtained by frequency modulating a reference clock signal is inputted to a source signal line-side driving circuit, while a modulated clock signal which differs from the

modulated clock signal in quantity of frequency shifting or method of frequency modulation is inputted to a gate signal line-side driving circuit, either explicitly or inherently.

Since Bassetti does not teach all the elements of the independent claims, either explicitly or inherently, an anticipation rejection cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 102 are in order and respectfully requested.

Paragraphs 6-10, 12, 15 and 16 of the Official Action reject claims 2-11 and 30-34 as obvious based on the combination of Bassetti and U.S. Patent No. 6,115,020 to Taguchi, either alone or in combination with one or more of U.S. Patent No. 6,281,873 to Oakley, U.S. Patent No. 4,713,688 to Guttner, and U.S. Patent No. 5,703,621 to Martin et al. The Applicant respectfully traverses the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Independent claims 2, 3 and 30 are directed to a method of driving a display device, comprising:

- (1) frequency modulating a reference clock signal and obtaining a modulated clock signal;
- (2) performing sampling and A/D conversion on an analog image signal on the basis of the modulated clock signal and obtaining a digital image signal
- (3) after performing digital signal processing on the digital image signal, performing D/A conversion on the digital image signal on the basis of the reference clock signal and obtaining an improved analog image signal; and
- (4) supplying the improved analog image signal to a corresponding pixel and obtaining an image.

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Bassetti and Taguchi, either alone or in combination with one or more of Oakley, Guttner and Martin, do not teach or suggest at least the above-referenced features of the present invention. Specifically, the Official Action concedes that Bassetti does not teach "an analog-to-digital converter (A/D) that samples an analog signal" (page 5, Paper No. 30) and relies upon Taguchi to allegedly cure these deficiencies in Bassetti. However, Bassetti also does not teach the following features of the present invention: after performing digital signal processing on a digital image signal, performing D/A conversion on the digital image signal on the basis of a reference clock signal and obtaining an improved analog image signal. The Official Action does not show how the cited prior art teaches or suggests at least the above-referenced features of the present invention.

Also, even if Bassetti was modified to incorporate the teachings of Taguchi and the other cited prior art references, the Applicant respectfully submits that the particular order of the above-referenced steps of the present invention, that is “after performing digital signal processing on a digital image signal, performing D/A conversion,” and the feature of performing D/A conversion “on the basis of the reference clock signal” would not be achieved by the alleged combination of the prior art.

Since Bassetti and Taguchi, either alone or in combination with one or more of Oakley, Guttner and Martin do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained.

Furthermore, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Bassetti, Taguchi, Oakley, Guttner and Martin or to combine reference teachings to achieve the claimed invention. MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be used together, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the features of the present invention.

The test for obviousness is not whether the references “could have been” combined or modified as asserted in the Official Action, but rather whether the references should have been. As noted in MPEP § 2143.01, “The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (emphasis in original). It is respectfully submitted that the standard set forth in the Official Action is improper to support a finding of *prima facie* obviousness.

As noted above, the Official Action concedes that Bassetti does not teach “an analog-to-digital converter (A/D) that samples an analog signal” (page 5, Paper No. 30). Also as noted above, Bassetti also does not teach or suggest that D/A conversion is performed after performing digital signal processing and that D/A conversion is performed on the basis of a reference clock signal.

The Official Action relies on Taguchi to allegedly teach “an invention that pertains to a display method capable of enlarging an image in the vertical direction at an arbitrary enlargement [ratio] wherein an A/D converter 621 converts an analog image signal onto n-bit digital signals” (Id.). The Official Action asserts that “it would have been obvious to a person of ordinary skill in the art to combine Bassetti and Taguchi inventions because while Bassetti teaches how to frequency modulate a video clock signal, Taguchi teaches how to achieve A/D conversion in such a device” (pages 5-6, Id.). The alleged motivation to combine Bassetti and Taguchi is “to efficiently enlarge an image in a display device without causing adverse effects such as flicker noise appearing on the image” (page 6, Id.) The Applicants respectfully disagree and traverse the above assertions in the Official Action.

The Applicant respectfully submits that the alleged motivation is not appropriate. Bassetti does not appear to be concerned about an enlargement of an image; therefore, one of ordinary skill in the art would not have been motivated to modify Bassetti as proposed in the Official Action. Also, it is not clear how or why it would have been obvious at the time of the invention to modify Bassetti such that D/A conversion is performed after performing digital signal processing and such that D/A conversion is performed on the basis of a reference clock signal. These features are not taught or suggested by the cited prior art.

In the present application, it is respectfully submitted that the prior art of record, either alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to

why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

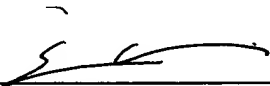
For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Paragraphs 11, 13 and 14 of the Official Action reject claims 16 and 18-29 as obvious based on the combination of Bassetti and Oakley, Guttner or Martin. The Applicant respectfully traverses the rejection because the Official Action has not made a *prima facie* case of obviousness.

Please incorporate the arguments above with respect to the deficiencies in Bassetti. Oakley, Guttner or Martin does not cure the deficiencies in Bassetti. The Official Action relies on Oakley to allegedly teach a Gaussian histogram (page 11, Paper No. 30), on Guttner to allegedly teach a sine wave or triangular wave (page 12, Id.) and on Martin to allegedly teach an LCD, an electroluminescent display or any other type of display (page 13, Id.). However, Bassetti and Oakley, Guttner or Martin, either alone or in combination, do not teach or suggest applying a first modulated clock to a source driving circuit and a second, different modulated clock to a gate driving circuit. Since Bassetti and Oakley, Guttner or Martin do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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